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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,679	09/15/2000	Fernando C. M. Martins	10559/195001/P8367	1908

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EXAMINER

BECKER, SHAWN M

ART UNIT	PAPER NUMBER
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2173

DATE MAILED: 01/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/662,679

Applicant(s)

MARTINS, FERNANDO C. M.

Examiner

Shawn M. Becker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because Fig. 2 is half scribbled out. It is unclear what Fig. 2 is supposed to represent. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
3. The disclosure is objected to because of the following informalities: on page 4, line 14, "by a pair of adjacent beats are the audio signal" is grammatically incorrect, and on page 5, line 21, a period should be inserted after the word "identified".
4. The disclosure is missing a brief summary of the invention.

Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-3, 9-11, 13, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites, "gestures are performed in the video clip contains the predefined gestures", which is grammatically incorrect and does not make sense.

7. Claim 9 recites the limitation "each video frame" in line 2. There is insufficient antecedent basis for this limitation in the claim.

8. Claim 11 recites the limitation "the target gesture" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 13 recites the limitation "the predefined gesture" in line 2. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 29 recites the limitation "the video processing system" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 1-3, 8-10, 13-16, 26 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent No. 6,256,033 to Nguyen.

Referring to claims 1 and 26, Nguyen discloses a method and a computer program product for recognizing gestures contained in video data that segments video data to create a video clip based on timing data. See col. 2, lines 28-34. The method determines a most likely gesture in the video clip. See col. 5, lines 13-30, which describes how the Hidden Markov Model is used to determine the most probable state (most likely gesture).

Referring to claim 14, Nguyen discloses a temporal segmentor connected to receive video data and to create a video clip from the video data based on timing data (col. 2, lines 28-34).

Nguyen also discloses a recognition engine, in communication with the temporal segmentor, to determine if the video clip contains a predefined gesture. See col. 1, lines 17-23.

Referring to claims 2-3, col. 5, lines 13-45 of Nguyen describes how Hidden Markov Models are used to determine a probability that each of a plurality of predefined gestures are performed in the video clip.

Referring to claims 8-10, each video clip of Nguyen contains video frames (col. 7, line 22), and in each frame, the moving regions are identified (col. 8, lines 58-61). Feature vectors

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(array of key points) are generated for each video frame of the video clip. See col. 8, line 49 – col. 9, line 46, which describes how significant positional coordinates are extracted from each frame to make a comparison to the known gesture coordinates.

Referring to claims 13 and 22, Nguyen discloses that the recognition engine is configured to recognize predefined gestures and that determining if the video clip contains a predefined gesture includes generating a gesture probability vector (array) having a plurality of elements, each element being associated with one of a predefined gestures and representing a probability that the video clip contains each of the associated predefined gestures. See col. 11, lines 30-49 and col. 10, lines 18-37.

Referring to claim 15, the recognition engine of Nguyen includes a plurality of Hidden Markov Models. See col. 5, lines 13-18.

Referring to claim 16, Nguyen teaches a timing data source, in communication with the temporal segmentor, to provide the timing data. See col. 2, lines 24-31, which implies a timing data source, because the frames are in data sets for a given period of time. Nguyen shows a video source (camera; Fig. 2, 200), in communication with the temporal segmentor, to provide the video data to the temporal segmentor.

### ***Claim Rejections - 35 USC § 103***

13. Claims 4-7, 11-12, 17-21, 23-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen and U.S. Patent No. 6,227,968 to Suzuki et al.

Referring to claims 4-6, 23-25, and 27, Nguyen fails to teach that the timing data includes beat data corresponding to a beat of audio data. However, Suzuki teaches a dance game, which is intended to make the player use his entire body to create rhythm sensations (col. 1, lines 47-

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50). The dance game of Suzuki teaches that audio data is received and the beat data is extracted to create timing data (col. 7, lines 24-34). Suzuki teaches a predefined time window surrounding the occurrence of at least one beat. See col. 7, lines 35-50. Also, see col. 1, lines 9-13, which describes how the player is to perform the action in time with the rhythm. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the gesture recognition method of Nguyen to be used in the dance game of Suzuki, such that the timing data includes beat data extracted from audio data and where the video clip covers a predefined time window surrounding at least one beat as supported by Suzuki. One would have been so motivated in order to compare all movements of the player (i.e. arms) to appropriate dance moves because the step-on base of Suzuki only captures the movements of the player's feet, and does not recognize the movements of the rest of the body as intended in Suzuki.

Referring to claims 7, 17-18, and 21, although Nguyen describes predefined gestures, he does not explicitly teach a move subsystem, in communication with the timing data source, to display a target gesture to be performed by the subject. However, the dance game of Suzuki teaches displaying a target gesture to be performed by the subject. The target gesture is a dance move. See col. 12, lines 57-61. The target gesture is displayed on the display subsystem (monitor; col. 12, line 59). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the gesture recognition method of Nguyen to display a target gesture in order to guide the subject through a dance as supported by Suzuki.

Referring to claims 11-12 and 19-20, the method of Nguyen and Suzuki, *supra*, generates and displays a score based on whether a target movement (gesture) was performed. See col. 11,

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lines 37-41. The object of the Suzuki dance game is to achieve the highest score by performing the appropriate gestures.

Referring to claim 28, Nguyen teaches an A/V processing system that includes a video source (camera; Fig. 2, 200). He discloses a computer program product for recognizing gestures contained in video data, comprising instruction operable to cause a programmable processor, in communication with the video source to segment the video clip and determine if the video clip contains a predefined gesture. See col. 1, lines 17-23.

Nguyen does not explicitly teach an audio source from which beat data is extracted, such that the timing of the segments are based on the beat data. However, Suzuki teaches a dance game, which is intended to make the player use his entire body to create rhythm sensations (col. 1, lines 47-50). The dance game of Suzuki teaches that audio data is received and the beat data is extracted to create timing data (col. 7, lines 24-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the gesture recognition method of Nguyen to be used in the dance game of Suzuki, such that the timing data includes beat data extracted from audio data as supported by Suzuki. One would have been so motivated in order to compare all movements of the player (i.e. arms) to an appropriate dance move because the step-on base of Suzuki only captures the movements of the player's feet, and does not recognize the movements of the rest of the body as intended in Suzuki.

Referring to claim 29, Nguyen teaches the computer program product includes instruction operable to cause the programmable processor to perform a Hidden Markov Model process to determine if the video clip contains the predefined gesture. See col. 5, lines 13-18.



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Referring to claim 30, Nguyen discloses a display (monitor; Fig. 2, 208) to display information based on whether the video clip contains the predefined gesture. See col. 6, lines 36-44, which describes how figures on the display can be augmented if the gesture is recognized as a predefined gesture.

### *Conclusion*

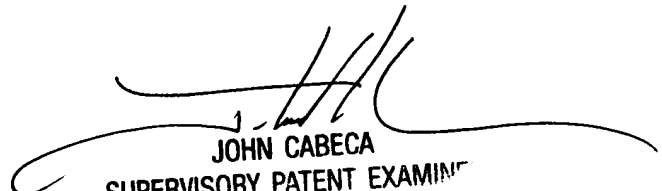
14. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach gesture recognition techniques and dance games.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn M. Becker whose telephone number is 703-305-7756. The examiner can normally be reached on M-T 8:00 - 5:30 and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Cabeca can be reached on 703-305-3116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-745-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

smb  
January 24, 2003

  
JOHN CABECA  
SUPERVISORY PATENT EXAMINER  
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